

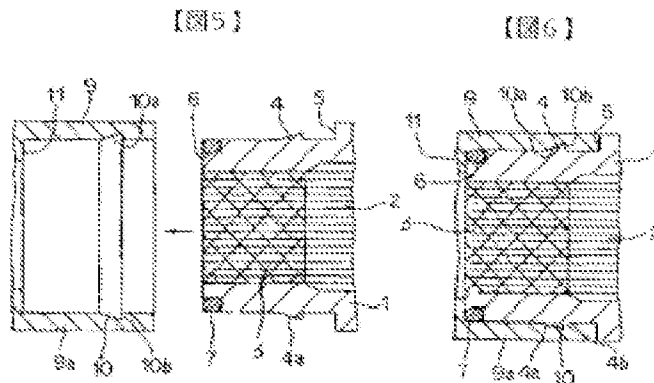
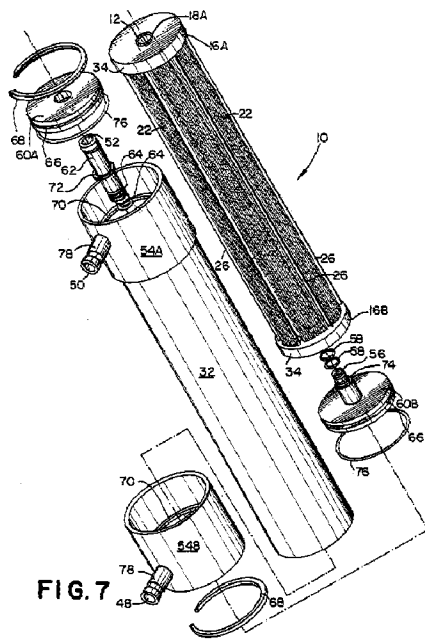
DETAILED ACTION

Claims 1-6 are pending as originally filed

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of de Winter (US 6,183,639) and/or JP 2002-292213 and/or Eckman (US 5, 470,469) and/or Collins et al (US 2002/0053540).

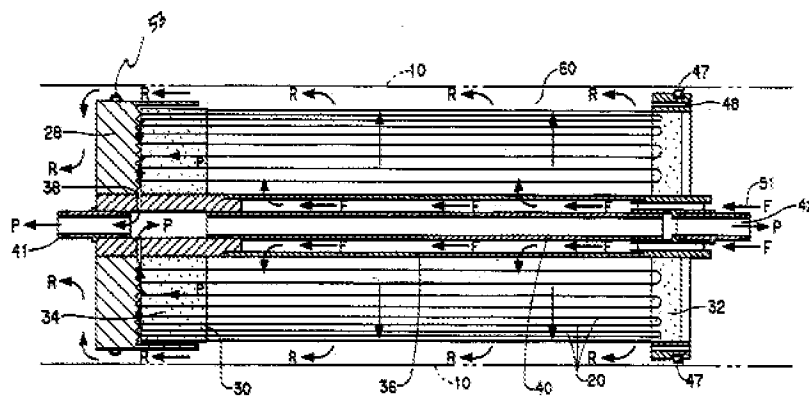
De Winter teaches a hollow fiber element having feed inlet and outlet, a central perforated tube, and feed and concentrate headers enclosed with snap rings (68) - see the figures, particularly fig 7. The teaching of this reference differs from the claims in the central tube being the permeate tube, and not the feed tube as claimed. However, such reversal of function of the parts is common in the art, as evidenced by Eckman, wherein the feed is through a central perforated tube.

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JP 2002-292213 teaches a permeate chamber which is snap-fitted on the open end of the hollow fibers – see the abstract and the figures, particularly, figs 5 and 6 shown above.

Collins teaches a hollow fiber cartridge design wherein the header chamber (22) (see fig 1) is attached to the housing with a snap fit. See paragraph 31. Collins teaches a hemodialysis membrane cartridge, which has fluids flowing in both the lumen side and the shell side, and does not teach the central feed tube. However, the central feed tube is well known in the art as taught by Eckman (see fig below).



The inventive idea claimed is the “snap fit” of the chamber on to the tube-sheet of the hollow fibers to form a collection chamber for permeate. Such an attachment is well known and made obvious by the teachings of these references, and one would use snap fit for such attachment for convenience as taught by Collins.

Regarding the material of the snap, it is made of plastic or resin in Collins. According to de Winters, any suitable material can be used. De Winter teaches: “However, those of skill in the art, will appreciate from this disclosure that various materials can be used to form the outer housing 32 and associated components

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including steel, plastics, alloys, and multi-layered materials such as laminates, depending on the particular liquid being filtered by the filter module 10 and the environment in which the filter module 10 is operated.”

Regarding the mechanical properties of the material such as tensile and impact strength, again, one of ordinary skill in the art would be capable of selecting the right material for the part.

Eckman teaches reverse osmosis, and multiple cartridges in a housing as in claim 6. It would be obvious to one of ordinary skill in the art to combine the teachings of these references to arrive at applicant's invention, and the results of such combinations are predictable.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S. Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Sample can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Krishnan S Menon/
Primary Examiner, Art Unit 1797